AMENDMENTS TO THE CLAIMS

Claims 1-32 (Cancelled).

33. (Currently amended) An oil from water separator comprising:

an oil disengagement chamber adapted to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, said oil disengagement chamber partially separated from an effluent water chamber by an under flow baffle which ducts said substantially oil free volume of water to said effluent water chamber, the oil disengagement chamber having a low liquid level which is higher than the under flow baffle, the outflow of said substantially oil free volume of water from said effluent water chamber being limited by flow retarding means to a rate of outflow which is a function of the head of the liquid in said effluent water chamber;

wherein during operation, the level of said oil and water mixture will rise from a chamber low liquid level up to a higher liquid level and then return to said chamber low liquid level, thereby defining an oil and water mixture active lag capacity within an oil and water mixture accumulation volume in said oil disengagement chamber ~~caused in part by said flow retarding means, such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said effluent water chamber will contain a proportion of oil in water substantially below a predefined limit.~~ and wherein said flow retarding means operates to accumulate said oil and water mixture in said oil disengagement chamber in said oil and water mixture accumulation volume above said chamber low liquid level and wherein said flow retarding means comprises at least one siphon which primes at a chamber high liquid level and loses prime at said chamber low liquid level and wherein said accumulation volume is sized with reference to

(a) inflow rate; and

(b) desired residence time of said oil and water mixture in said oil disengagement chamber such that, for a predefined range of inflows into said oil

disengagement chamber, outflow from said effluent water chamber will contain a proportion of oil in water substantially below a predefined limit.

Claims 34-59 (Cancelled).

60. (Currently amended) A method of converting a separator which has an oil disengagement chamber which normally operates liquid full into an oil from water separator having an oil disengagement chamber adapted to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, said oil disengagement chamber partially separated from an effluent water chamber by an under flow baffle which ducts said substantially oil free volume of water to said effluent water chamber, the oil disengagement chamber having a low liquid level which is higher than the under flow baffle, the outflow of said substantially oil free volume of water from said effluent water chamber being limited by flow retarding means to a rate of outflow which is a function of the head of the liquid in said effluent water chamber, and wherein during operation, the level of said oil and water mixture will rise from a chamber low liquid level up to a higher liquid level and then return to said chamber low liquid level, thereby defining an oil and water mixture active lag capacity within an oil and water mixture accumulation volume in said oil disengagement chamber and wherein said flow retarding means operates to accumulate said oil and water mixture in said oil disengagement chamber in said oil and water mixture accumulation volume above said chamber low liquid level and wherein said flow retarding means comprises at least one siphon which primes at a chamber high liquid level and loses prime at said chamber low liquid level and wherein said accumulation volume is sized with reference to an inflow rate and desired residence time of said oil and water mixture in said oil disengagement chamber such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said effluent water chamber will contain a proportion of oil in water substantially below a predefined limit, said method comprising: ~~an oil from water separator which normally operates liquid full into an oil from water separator which has an oil disengagement chamber, said method comprising:~~

~~adapting said oil disengagement chamber to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, the oil disengagement chamber being partially separated from an effluent water chamber by an under flow baffle which ducts the substantially oil free volume of water to the effluent water chamber, the oil disengagement chamber having a low liquid level which is higher than the under flow baffle; and~~

installing a flow retarding device in the form of said siphon in or in association with a weir wall of the ~~decant~~ separator so that a rate of outflow of the substantially oil free volume of water is controlled as a function of the head of the liquid in the effluent water chamber.

61. (Previously amended) An oil from water ~~separator~~ separation system comprising: ~~as defined in Claim 33, comprising a plurality of oil from water separators each as defined by Claim 33, said plurality of separators connected in series whereby outflow from each preceding separator passes to an inlet of the next succeeding separator.~~

a plurality of oil from water separators wherein each oil from water separator comprises an oil disengagement chamber adapted to receive an oil and water mixture and retain it for a sufficient time in a relatively undisturbed state whereby oil in the mixture floats to the top of the mixture resulting in a substantially oil free volume of water having a layer of oil derived from said oil and water mixture floating on the surface thereof, said oil disengagement chamber partially separated from an effluent water chamber by an under flow baffle which ducts said substantially oil free volume of water to said effluent water chamber, the oil disengagement chamber having a low liquid level which is higher than the under flow baffle, the outflow of said substantially oil free volume of water from said effluent water chamber being limited by flow retarding means to a rate of outflow which is a function of the head of the liquid in said effluent water chamber, wherein during operation, the level of said oil and water mixture will rise from a chamber low liquid level up to a higher liquid level and then return to said chamber low liquid level,

thereby defining an oil and water mixture active lag capacity within an oil and water mixture accumulation volume in said oil disengagement chamber and wherein said flow retarding means operates to accumulate said oil and water mixture in said oil disengagement chamber in said oil and water mixture accumulation volume above said chamber low liquid level and wherein said flow retarding means comprises at least one siphon which primes at a chamber high liquid level and loses prime at said chamber low liquid level and wherein said accumulation volume is sized with reference to

(a) inflow rate; and

(b) desired residence time of said oil and water mixture in said oil disengagement chamber such that, for a predefined range of inflows into said oil disengagement chamber, outflow from said effluent water chamber will contain a proportion of oil in water substantially below a predefined limit;

wherein said plurality of separators are connected in series whereby outflow from each preceding separator passes to an inlet of the next succeeding separator.

62. (Cancelled).

63. (New) The separator of Claim 33 operable whereby said desired residence time is such that said oil and water mixture is retained in said oil and water mixture accumulation volume in said oil disengagement chamber for an effective residence time comprising a period of time long relative to conventional liquid full separators thereby to allow oil separation to occur prior to periodic siphoned exit.

64. (New) The separator of Claim 63 wherein said effective residence time is of the order of hours.

65. (New) The separator of Claim 33 operable such that periodic flushing of said separator by operation of said flow retarding means will result in a volume of liquid equal to said oil and water accumulation volume being moved periodically from said oil disengagement chamber through said effluent water chamber so as to exit via said flow retarding means.

66. (New) The separator of Claim 33 whereby said flow-retarding means operates to provide an outflow characteristic of outflow from said oil and water mixture accumulation

volume which has a different characteristic from an inflow characteristic of inflow into said oil and water mixture accumulation volume.

67. (New) The separator of Claim 66 wherein said rate of outflow is a discontinuous function.

68. (New) The separator of claim 65 or 66 wherein there exists a mismatch whereby said rate of inflow is mismatched relative to said outflow rate.

69. (New) The separator of any one of Claims 63 to 68 wherein separation can take place within said oil and water accumulation volume whilst liquid contained in said volume changes in quantity over time.

70. (New) The method of Claim 60 wherein said separator is operable whereby said desired residence time is such that said oil and water mixture is retained in said oil and water mixture accumulation volume in said oil disengagement chamber for an effective residence time comprising a period of time long relative to conventional liquid full separators thereby to allow oil separation to occur prior to periodic siphoned exit.

71. (New) The method of Claim 70 wherein said effective residence time is of the order of hours.

72. (New) The method of Claim 60 wherein said separator is operable such that periodic flushing of said separator by operation of said flow retarding means will result in a volume of liquid equal to said oil and water accumulation volume being moved periodically from said oil disengagement chamber through said effluent water chamber so as to exit via said flow retarding means.

73. (New) The method of Claim 60 wherein said flow-retarding means operates to provide an outflow characteristic of outflow from said oil and water mixture accumulation volume which has a different characteristic from an inflow characteristic of inflow into said oil and water mixture accumulation volume.

74. (New) The method of Claim 73 wherein said rate of outflow is a discontinuous function.

75. (New) The method of Claim 73 or 74 wherein there exists a mismatch whereby said rate of inflow is mismatched relative to said outflow rate.

76. (New) The method of any one of Claims 70 to 75 wherein separation can take place within said oil and water accumulation volume whilst liquid contained in said volume changes in quantity over time.

77. (New) The separation system of Claim 61 wherein each said separator is operable whereby said desired residence time is such that said oil and water mixture is retained in said oil and water mixture accumulation volume in said oil disengagement chamber for an effective residence time comprising a period of time long relative to conventional liquid full separators thereby to allow oil separation to occur prior to periodic siphoned exit.

78. (New) The separation system of Claim 77 wherein said effective residence time is of the order of hours.

79. (New) The separation system of Claim 61 wherein each said separator is operable such that periodic flushing of said separator by operation of said flow retarding means will result in a volume of liquid equal to said oil and water accumulation volume being moved periodically from said oil disengagement chamber through said effluent water chamber so as to exit via said flow retarding means.

80. (New) The separation system of claim 61 wherein said flow-retarding means operates to provide an outflow characteristic of outflow from said oil and water mixture accumulation volume which has a different characteristic from an inflow characteristic of inflow into said oil and water mixture accumulation volume.

81. (New) The separation system of Claim 80 wherein said rate of outflow is a discontinuous function.

82. (New) The separation system of Claim 80 or 81 wherein there exists a mismatch whereby said rate of inflow is mismatched relative to said outflow rate.

83. (New) The separation system of any one of Claims 77 to 82 wherein separation can take place within said oil and water accumulation volume whilst liquid contained in said volume changes in quantity over time.